

### Abstract of the Disclosure

A prefilled syringe composed of a barrel having a luer tip at one end and an open proximal end, the barrel having at least a three layer structure of an innermost layer, an outermost layer, both made of a polyolefin resin, and an intermediate layer made of a resin with a barrier property and sandwiched by the innermost layer and the outermost layer. The barrel is produced through the sequential steps of: (a) injecting a specific amount of a polyolefin resin inside a cavity; (b) injecting a specific amount of a resin excelling in barrier property; (c) injecting a specific amount of the polyolefin resin again; and (d) separating the luer tip surface and an injection unit by pushing off a valve pin provided inside a valve gate or an inner nozzle of the injection unit, which injects the resin excelling in barrier property, toward the direction of the luer tip surface as desired.